CLAIMS

What is claimed is:

1. A calibration circuit for adjusting a common electrode voltage Vcom for a liquid crystal display (LCD), comprising a controller to receive a first command for changing said common electrode voltage Vcom by way of a single-wire interface, and to cause said common electrode voltage Vcom to change in response to said first command.

2. The calibration circuit of claim 1, further comprising a counter to generate a count related to said common electrode voltage Vcom.

3. The calibration circuit of claim 2, wherein said controller causes said counter to change said count in response to said first command.

4. The calibration circuit of claim 2, further comprising a digital-to-analog converter (DAC) to generate an intermediate voltage related to said count.

5. The calibration circuit of claim 4, further comprising a current-steering circuit to steer a current related to said common electrode voltage Vcom in response to said intermediate voltage.

6. The calibration circuit of claim 5, wherein said current-steering circuit comprises:

a field effect transistor (FET) including a drain, a gate, and a source;

an operational amplifier including a first input to receive said intermediate voltage, a second input coupled to the source of said FET, and an output coupled to the gate of said FET.

7. The calibration circuit of claim 6, further comprising a current-setting resistor coupled to the source of said FET.

8. The calibration circuit of claim 7, further comprising a voltage divider including an intermediate node coupled to a drain of said FET.

9. The calibration circuit of claim 8, further comprising a buffer coupled to said intermediate node of said voltage divider.

10. The calibration circuit of claim 2, further comprising a non-volatile memory for storing said count.

11. The calibration circuit of claim 10, wherein said non-volatile memory comprises an electrically erasable programmable read only memory (EEPROM).

12. The calibration circuit of claim 10, wherein said controller causes said count of said counter to be rewritten into said non-volatile memory in response to a second command received by way of said single-wire interface.

13. The calibration circuit of claim 12, wherein said second command comprises a voltage greater than a predetermined threshold.

14. The calibration circuit of claim 13, further comprising a comparator to compare said second command voltage to said threshold, and to generate a

signal for said controller if said second command voltage is greater than said threshold.

15. The calibration circuit of claim 13, wherein said non-volatile memory is configured to receive said second command voltage for use in storing said count into said non-volatile.

16. The calibration circuit of claim 1, wherein said controller includes an enable input for receiving a second command which causes said controller to ignore said first command.

17. The calibration circuit of claim 1, further comprising a low power mode circuit to reduce a power consumption of said calibration circuit.

18. A method of adjusting a common electrode voltage Vcom of a liquid crystal display (LCD), comprising:

receiving a first command to increase said common electrode voltage Vcom by way of a single-wire interface;

increasing said common electrode voltage Vcom in response to said first command;

receiving a second command to decrease said common electrode voltage Vcom by way of said single-wire interface; and

decreasing said common electrode voltage Vcom in response to said second command.

19. The method of claim 18, further comprising:
generating a count related to said common electrode voltage Vcom; and
using said count to form said common electrode voltage Vcom.

20. The method of claim 19, further comprising:

receiving a third command to store said count in a non-volatile memory by way of said single-wire interface;

storing said count in said non-volatile memory in response to said third command.

21. The method of claim 19, further comprising changing said count in response to said first command and/or said second command.

22. The method of claim 19, further comprising decrementing said count in response to said first command.

23. The method of claim 19, further comprising incrementing said count in response to said second command.

24. The method of claim 18, wherein said first command comprises a pulse.

25. The method of claim 24, wherein a maximum amplitude of said pulse is above a predetermined amplitude threshold to indicate that said first command is for increasing the common electrode voltage Vcom.

26. The method of claim 24, wherein a width of said pulse is above a predetermined width threshold to indicate that said pulse is not to be ignored.

27. The method of claim 19, wherein said second command comprises a pulse.

28. The method of claim 27, wherein a minimum amplitude of said pulse is below a predetermined amplitude threshold to indicate that said second command is for decreasing the common electrode voltage Vcom.

29. The method of claim 28, wherein a width of said pulse is above a predetermined width threshold to indicate that said pulse is not to be ignored.

30. The method of claim 20, wherein said third command comprises a voltage above a predetermined voltage threshold.

31. The method of claim 30, further comprising using said voltage to program a storing of said count into said non-volatile memory.

32. The method of claim 19, further comprising:

receiving a pulse by way of said single-wire interface; and

ignoring said pulse if a width of said pulse is below a predetermined width threshold.

33. The method of claim 19, further comprising:

receiving a third command to disable a processing of said first and second commands;

receiving a fourth command to increase or decrease said common electrode voltage Vcom by way of said single-wire interface; and

ignoring said fourth command in response to said third command.

34. A calibration circuit to generate a common electrode voltage Vcom for a liquid crystal display (LCD), comprising a controller to receive commands for

changing said common electrode voltage Vcom, and to cause said common electrode voltage Vcom to change in response to said commands.

35. A method comprising:

receiving a first command to increase said common electrode voltage Vcom;

increasing said common electrode voltage Vcom in response to said first command;

receiving a second command to decrease said common electrode voltage Vcom; and

decreasing said common electrode voltage Vcom in response to said second command.

36. A liquid crystal display (LCD) comprising:

a plurality of pixels arranged in rows and columns, wherein each pixel comprises a switching element and a liquid crystal medium;

a data signal line driver to generate data for pixels in common columns by way of a plurality of data lines, wherein each data line is electrically coupled to the corresponding switching element;

a scan signal line driver to generate select commands for pixels in common rows by way of plurality of select lines, wherein each select line controls the switching of the corresponding switching element to selectively couple the corresponding data line to the corresponding liquid crystal medium; and

a calibration circuit to generate a common electrode voltage Vcom for each liquid crystal medium, wherein said calibration circuit comprises a controller to receive a first command for changing said common electrode voltage Vcom by way of a single-wire interface, and to cause said common electrode voltage Vcom to change in response to said first command.